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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/802,068

03/15/2004

Richard L. Mahle

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11/03/2005

TEXAS INSTRUMENTS INCORPORATED

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EXAMINER

THAI, LUAN C

ART UNIT

PAPER NUMBER

2891

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/802,068

Applicant(s)

MAHLE, RICHARD L.

Examiner

Luan Thai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/19/05.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This Office action is responsive to the amendment filed August 19, 2005.

Claims 1-7 are pending in this application.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2 and 5-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Chuang (6,483,178 of record) as set forth in the previous Office Action mailed May 19, 2005 and now repeated.

The figures and reference numbers referred to in this office action are used merely to indicate an example of a specific teaching and are not to be taken as limiting.

Regarding claims 1, 2 and 5-6, Chuang (see specifically figures 3-12) discloses a method of making an IC package mold lock comprising the steps of: providing a first niche (61a/61b/61c/61d) in a lead frame surface; providing an opposing niche (62a/62b/62c/62d) in an opposing lead frame surface, the opposing niche partially intersecting with the first niche such that an aperture bounded by a key (3c) in the lead frame is defined by the intersecting portions (see figures 4a-4b-5-6-7), and such that key (3c) is defined by the nonintersecting portions; and encapsulating the first niche, opposing niche, the aperture and the key with mold compound (5)

to form a mold lock (see fig. 3, Col. 3, lines 45-50 and lines 57+). Chuang further discloses the opposing niche axially aligned with the first niche of non-identical size and shape (see figures 5, 9a-9b) or the opposing niche axially aligned with the first niche of identical size and shape (see figure 7), or the opposing niche axially unaligned with the first niche of non-identical size and shape (see figure 6, Col. 3, lines 60+).

3. Claims 1-3 and 5-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Masuda et al. (4,862,246 of record) as set forth in the previous Office Action mailed May 19, 2005 and now repeated.

The figures and reference numbers referred to in this office action are used merely to indicate an example of a specific teaching and are not to be taken as limiting..

Regarding claims 1-3 and 5-7, Masuda et al. (see specifically figures 1-6) disclose a method of making an IC package mold lock comprising the steps of: providing a first niche (11) in surfaces of die pad (13) and lead fingers (10) by etching (see figures 1A, 3B and 5); providing an opposing niche (11) in an opposing surfaces of die pad (13) and lead fingers (10) by etching (Col. 3, lines 4+), the opposing niche partially intersecting with the first niche such that an aperture (12) in the lead frame is defined by the intersecting portions (see figures 1D, 2C, 4C and 4D), and such that a key (e.g., the protrusion extending from the side wall to the center of the aperture 12, see figure 1D) is defined by the nonintersecting portions (see figures 1D, 2C, 4C, 4D); and encapsulating the first niche, opposing niche, the aperture and the key with mold compound (20) to form a mold lock (Col. 3, lines 21-29). Masuda et al. further disclose the opposing niche axially aligned with the first niche of non-identical size and shape (see figures 4C and 4D) or the opposing niche axially aligned with the first niche of identical size and shape (see figure 1D).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chuang (6,483,178 of record) as set forth in the previous Office Action mailed May 19, 2005 and now repeated.

Regarding claim 4, Chuang discloses the opposing niche axially aligned with the first niche of identical size and shape (see figure 7). Chuang also discloses the opposing niche axially unaligned with the first niche of non-identical size and shape (see figure 6, Col. 3, lines 60+). Chuang, however, does not explicitly teach the opposing niche being approximately same size and shape with the first niche.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the niches in Chuang's package by forming the opposing niche axially unaligned with the first niche of approximately identical same size and shape since forming the niches in identical size and shape would be simplifier the process of etching and such modification is held to be within the ordinary designing ability expected of a person skilled in the art.

Indeed, it has been held that mere shape limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical.

Note that the specification contains no disclosure of either the critical nature of the claimed shapes (e.g., identical same size and shape of the first and the opposing niches) of any unexpected results arising therefrom. Where patentability is aid to be based upon particular chosen shapes or upon another variable recited in a claim, the Applicant must show that the chosen identical shapes of the first and the opposing niches are critical.

Response to Arguments

6. Applicant's arguments filed on August 19, 2005 have been fully considered but they are not persuasive.

Applicant argues that Chuang and Masuda do not show intersecting portions, as claimed in claim 1. In response, the Examiner points out that Chuang's figures 3-11 and Masuda's figures 1D, 2C, 4C and 4D, clearly show the intersection portions defined by the first niche in the lead frame surface and the opposing niche in the opposing surface of the lead frame, as described in the Rejection above.

Conclusion

7. Applicant's amendment filed on August 19, 2005 has been fully considered but they are not persuasive. Therefore, **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luan Thai whose telephone number is 571-272-1935. The examiner can normally be reached on 6:30 AM - 5:00 PM, Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bradley W. Baumeister can be reached on 571-272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Luan Thai

Primary Examiner

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October 27, 2005